

AMENDMENTS TO THE CLAIMS

1. (CURRENTLY AMENDED) A solid-state image pick-up device comprising: ~~on~~

a semiconductor substrate,

a plurality of light receiving sensor sections on the semiconductor substrate,

a plurality of vertical transfer path formed close to each of the light receiving sensor sections, and

a channel stopper provided between the adjacent vertical transfer paths and formed by an insulating layer having a trench structure, wherein a conductive substance to which a predetermined voltage is applied is buried in the insulating layer and an oxide film is formed between the conductive substance and the adjacent vertical transfer paths.

2. (ORIGINAL) The solid-state image pick-up device according to claim 1, wherein the predetermined voltage is a negative voltage if a signal charge is an electron, and is a positive voltage if the signal charge is a hole.

3. (ORIGINAL) The solid-state image pick-up device according to claim 1, wherein the predetermined voltage is a pulse having an opposite phase to that of a read pulse to be applied to a transfer electrode of the vertical transfer path.

4. (PREVIOUSLY PRESENTED) The solid-state image pick-up device according to claim 1, wherein a diffusion region having an opposite conductivity type to that of the light receiving sensor section is formed in a lowermost part of the channel stopper.

5. (ORIGINAL) The solid-state image pick-up device according to claim 4, wherein the conductive substance is also doped with a doped impurity in the diffusion region, and the conductive substance and the diffusion region are thus set in a connecting state.

6. (PREVIOUSLY PRESENTED) The solid-state image pick-up device according to claim 1, wherein the conductive substance is a polycrystalline silicon.

7. (CURRENTLY AMENDED) The solid-state image pick-up device according to claim 1 3, wherein the conductive substance is a polycrystalline silicon.

8. (PREVIOUSLY PRESENTED) The solid-state image pick-up device according to claim 4, wherein the conductive substance is a polycrystalline silicon.

9. (PREVIOUSLY PRESENTED) The solid-state image pick-up device according to claim 5, wherein the conductive substance is a polycrystalline silicon.

10. (NEW) The solid-state image pick-up device according to claim 1, wherein a coefficient of thermal expansion of the conductive substance is approximately equal to a coefficient of thermal expansion of a silicon substrate forming said semiconductor substrate.

11. (NEW) The solid-state image pick-up device according to claim 10, wherein said conductive substance is a polycrystalline silicon.

Docket No. 0649-0899P
Appl. No.: 10/615,904
Art Unit: 2826
Amendment dated April 16, 2004
Reply to Office Action of January 16, 2004
Page 5 of 12

AMENDMENTS TO THE DRAWINGS

Applicants have voluntarily amended FIG. 9 to include reference to element 18 that is described in the present application with respect to this figure. One (1) replacement sheet of formal drawings incorporating the described change is provided as an attachment to this Amendment.